

Pachyderms and Threats Increasing in Garamba National Park, Zaire

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A new baby northern white rhino was born in Garamba National Park, Zaire in early June. The population now numbers 31 individuals and has doubled since 1984. An aerial census of the whole ecosystem carried out in May showed a continued increase in the elephant population to 8.883 ± 1.586 .

Status of Northern White Rhinos

This group of rhinos is the only known viable wild population of the northern subspecies of white rhinoceros (*Ceratotherium simum cottoni*), although there have been anecdotal reports of a few possible remaining in southern Sudan. In all other parts of their previous range they are almost certainly extinct. They are also the only Rhinocerotidae still extant in Zaire, although black rhinos (*Diceros bicornis*) occurred in the area of L'Upemba National Park in the southeast until the 1940s and may even have been present in the area of Garamba National Park until a rinderpest epidemic at the end of the last century, (Lang 1928).

The rhinos in Garamba are also more numerous than the captive northern white rhinos, which currently number nine individuals. There are two males and three females in the U.S.A. Four of the animals are over 20 years old and there have been three births and four deaths during their period of captivity.

The rhino population of Garamba National Park is increasing. Since 1984 an aid project funded largely by World Wide Fund for Nature (WWF), Frankfurt Zoological Society (FZS), and United Nations Educational and Scientific Organization (UNESCO) and coordinated by the IUCN—World Conservation Union has been working with the Institut Zairois pour la Conservation de la Nature (IZCN) to rehabilitate the park and conserve the ecosystem. During this

time the anti-poaching capabilities have been vastly improved, the rhino population has doubled and the elephant population has increased.

There are at present 31 known individual rhinos at Garamba. The sex ratio is 1:0.94. The adult to combined juvenile and sub-adult ratio is 1:1.4. The average annual rate of increase between 1984 and the present has been 9.7% (Fig. 1). Mean inter-calf interval has been 3.5 years with one female averaging less than 2 year intervals. Age of first parturition was 7 years for the first known age female to reproduce. These figures compare very closely with those found for southern white rhinos (*C. s. simum*) by Owen-Smith (1973), and are considerably better than the situation for captive northern whites (Table 1).

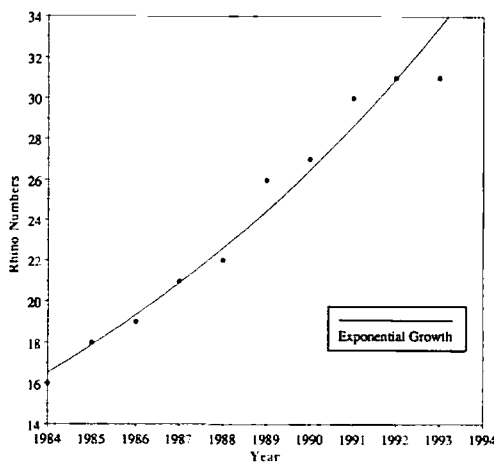


Figure 1. Rate of Growth of Rhino Population since 1984.

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Table 1. Demographic Parameters in White Rhino Populations.

Parameters	<i>C. s. cottoni</i> Garamba NP 1984-1992	<i>C. s. simum</i> Umfolozi GR 1969-1973	<i>C. s. cottoni</i> Captive 1972-1992
Annual rate increase	9.68%	9.5%	0
Inter-calf interval	2.5 years	2.4 years	9.2 years
Age at first parturition	7 years	7 years	15 years
Adult:Subadult + Juv. ratio	1:1.4	1:1.4	1:1.08
Sex ratio	1:0.94	1:1.25	1:1.5
Sources	Own data	Owen-Smith 73	Foose 92

Since 1984 the rhinos have been monitored using individual recognition. The calf that was born in June this year was the first female recorded in 1983, F1, Mama Moke. We still have not been able to ascertain the sex of the calf and already the grass is taller than the 60 cm high baby. When they are very young the infants always clamp their tails tightly between their legs rather than curling them up over their backs when disturbed as do older animals.

For the first time since the project started, we have also recorded two rhino deaths this year. The first was of a newborn male calf that was found stuck in the mud, and believed to have been that of a subadult primiparous female. The second was of a subadult whose bones and horns were found one to two months after death. The sub-adult was identified as 5c, Molende, a 3-1/2 year old male. He appeared to have died from natural causes. There was no sign of poaching. Two births and two deaths have so far left the population the same in 1993 as it was in 1992, but more births are expected, especially from two eight-year-old females.

Status of Elephants

A general aerial census of the whole ecosystem of Park and Domaines de Chasse was carried out in May 1993. This was part of a series of ecosystem and species specific counts carried out since 1983. The area covered was the entire park and Domaines de Chasse, (15,175 km²) at

6.7% sampling density. The population estimate for elephants based on the combined total of a stratified analysis was 8,883 ± 1,586. This comprised 8,705 elephants in the park and 178 in the Domaines de Chasse.

In 1976 an aerial census had estimated over 22,000 elephants. Heavy poaching had reduced the number to over 7,700 in 1983. Although poaching began to be brought under control after the project started in 1984, as evidenced by carcass ratios which changed from 1 dead: 8 live in 1983 through 1:23 in 1984, 1:86 in 1986 to 1:576 in 1991, there was a time lag in the recovery of the elephant population. Numbers dropped to 4,000-4,500, but are now on an upward trend again, as evidenced by Table 2.

Ecosystem Conservation

The presence of the Project working with the IZCN staff had secured control of the poaching apart from minor taking of buffalo for meat, until the war in Sudan and the plunging economy of Zaire increased the threat. In 1991, some 5,000 armed refugees fled through the park from Sudan, and some 50,000 are now settled on the edge of the Domaines de Chasse. Despite a massive recovery of arms and ammunition by the park staff, inevitably, arms are more readily available in the area. The pressures of more people and rapid devaluation are causing an increase in the poaching. Although the incidences of elephant poaching have been increasing, they are not yet

Table 2. Elephant numbers from aerial counts.

Date	Est. in Park	± S.E.	Est. in Dom.	Method	Source
1976	22,670	± 11,790	—	Aer. syst. sample	Savidge et al. 1976
1983	7,742	± 3,690	0	Aer. syst. sample	Hillman et al. 1983
1986	4,339	± 1,648	0	Aer. syst. sample	Hillman Smith 1989
1989	>4,065		—	Aer. block count	Hillman Smith 1989
1991	7,389	± 2,922	231	Aer. syst. sample	Own data
1993	8,705	± 1,584	178	Aer. syst. sample	Smith et al. 1993

of the order to reduce the elephant population. The poaching does, however, pose a serious threat to both the elephants and the rhinos. Anti-poaching tactics are being revised and funds are being sought to upgrade them.

Due to a combination of fire, elephants, and other large herbivores, there has been a long-standing contrast between the vegetation within the park and in the surrounding reserves. Due to the increasing elephant population, poaching pressure from the north and better protection within the southern Domaines de Chasse, the elephants are now moving out into the Domaines far more than before, particularly at night. This is leading to increased human/elephant conflict and to vegetation modification. In combination with the need to integrate local development into long-term conservation of the area, this is a question that urgently needs to be evaluated and solutions found.

At the recent meeting of the Rhinoceros Range State at UNEP, Nairobi in June, Zaire put for-

ward a Conservation Action Plan for the rhinos and their ecosystems. The long-term support of WWF/FZS/UNESCO/IUCN has been vital in rescuing the rhinos from extinction and conserving the ecosystem. The ongoing support of WWF has held the park together through the recent problems within the country and they have pledged long term support. Supplementary funds were sought to upgrade the anti-poaching and the monitoring and research, to develop an integrated management and development project and to investigate the elephant project. Long-term support for the area also includes the need to develop the unique Elephant Domestication Centre and foreign currency earning tourism. Urgent action is required in the face of the current threat, and long-term development and supporting mechanisms need to be effected.

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July 1993*

Literature Cited

- Hillman K., M. Borner, Mankoto ma Oyisenzo, P. Rogers, and F. Smith. 1983. Aerial census of the Garamba National Park, Zaire, March 1983, with emphasis on the northern white rhinos and elephants. Report to IZCN, IUCN, WWF, FZS, UNEP
- Hillman, Smith, K. 1989. Ecosystem Resource Inventory, Garamba National Park, IZCN/IUCN/WWF/FZS Internal document.
- Lang H. 1920. The White Rhinoceros of the Nelgain Congo. *Zoo. Soc. Bull. NY* 23(4) 65-92.

The GEF: A Suggestion

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Our planet faces a number of problems, from air and water pollution, waste disposal, an increasing human population, and ozone depletion to global climate change and ozone depletion. The explosive human population growth in developing countries and excessive resource consumption in developed countries: there is one issue that is of long term global importance: the planet's biological resources. In the past 20 years, we have seen a great deal of attention paid to biological resources. At the Earth Summit in Rio de Janeiro in 1992, Agenda 21 and the Convention on Biological Diversity were adopted by some 165 nations. A global convention negotiating a global fund for biological resources and other environmental issues is being negotiated (the Global Environment Facility).

Now, two and a half years after the GEF, two year Tranche of project funding has been set. The effectiveness of the GEF is being evaluated. The purpose of this article is to suggest that the GEF should be used to effect change in the environment. We believe that the GEF can be used to effect critically important environmental reforms that will have a real impact on the environment.

(Editors Note: this article includes a discussion of biodiversity, forest management, and finished projects for specific species. This article deals with this kind of project. The final article in this issue includes the final...